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ABSTRACT

In order to assess the needs of agriculture (AG) education and ascertain the potential employment demand for pre-service and in-service training in agriculture over the next 5 years, Maui Community College (MCC) sent questionnaires to Molokai community businesses, inquiring about their agricultural labor demand. In December 1997, 68 questionnaires were mailed to a broad spectrum of businesses, with a 30% return rate. Results indicated that there is great support for AG education in Molokai, and that 60% of the responding companies expect to hire AG personnel, most at above minimum wage, within the next 5 years. This demand from Molokai's small population base would absorb only one-half to two-thirds of the program capacity for pre-service training, leading to the recommendation that MCC's Molokai AG program run less frequent pre-service cycles and focus more on potential in-service needs. Course topics in greatest demand include irrigation, pest control, and equipment operation, as well as business and vocational aspects of agriculture and computer training. Chief barriers to taking MCC AG classes include lack of interesting topics and inconvenient class times. Document includes responder comments. Appendices include the survey developers, cover letter, questionnaire, mailing list, and respondents. (YKH)

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MOLOKAI COMMUNITY NEEDS ASSESSMENT FOR AGRICULTURE EDUCATION AND TRAINING

Maui Community College
Fall 1997

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MOLOKAI COMMUNITY NEEDS ASSESSMENT FOR AGRICULTURE EDUCATION AND TRAINING

Maui Community College
Fall 1997

PURPOSE

The purpose of this survey is to ascertain the potential employment demand for pre-service and in-service training in Agriculture over the next five years form related businesses on Molokai.

METHODOLOGY

In conjunction with the Agriculture Program Coordinator, Molokai Coordinator, Molokai Farm Manager, Molokai Secretary, and the Assistant Dean of Instruction under the auspices of the Dean of Instruction in the Fall 1997 semester (Appendix A), a cover letter (Appendix B) and questionnaire (Appendix C) were developed and tested.

A mailing list of 68 businesses was extracted from the yellow pages of the 1997 Maui County telephone directory. The list cut across a broad spectrum of business, including not only farmers and landscapers, but also agencies and retailers (see Appendix D). The sampling strategy was to poll the full population of potential Molokai businesses which might hire new AG labor in the next five years, in order to gain a complete picture of the potential community demand from all relevant employment sectors.

In December, 1997, the 68 questionnaires were mailed along with the cover letter and a postage paid return envelope. One envelope was returned as non-deliverable, reducing the sample size to 67.

The number of respondents was 20, for a return rate of 30 percent. All recipients would not be expected to reply because the inclusive sampling strategy, by its nature, included some for whom the survey did not apply.

RESULTS

A. Preference Given for AG Training in Personnel Actions. (Table Q-8)

TABLE Q-8
Preference in Personnel Actions for AG Training

Sector	Yes	No	N/A
Agencies	3	1	1
Farmers	4		
L'scape	3	1	
AquaC	2		
AnimalH*	2	1	
Flowers		2	
Retail	1		
Overall	**15**	**5**	**1**

* Note.- Double response, Yes and No.

- A clear preference is given for AG training in such personnel actions as hiring, retaining, and promoting employees (15, 75%).
- Both respondents in the Flowers sector responded that AG training is not a consideration for hiring, promoting, or retaining employees.

B. Employment Opportunities in Agriculture are Available on Molokai.

1. Employment demand is anticipated over the next five years but at a level lower than program capacity. (Table Q-7a)

TABLE Q-7a
Expected Employment Demand

Sector	Exp'd Hires	Expansion	Replacement	Firms Hiring	Firms Resp'g
Agencies	7	1	6	3	5
Farmers	21	16	5	3	4
L'scape	3	1	2	1	4
AquaC	6	3	3	2	2
AnimalH	1	–	1	1	2
Flowers	13	5	8	1	2
Retail	2	1	1	1	1
Overall	**53**	**27**	**26**	**12**	**20**

Note.- An "X" (instead of supplying the number expected to hire) was treated as "1."

- Expecting to hire are more than two-thirds (n-12, 60%) of the 20 responding agricultural companies on Molokai.
- The collective number of anticipated hires is reported at 53 spread over the next five years.
- The employment demand absorbs about two-thirds of program capacity, as estimated by the following method. The employment demand for 53 new hires in five years translates to a yearly demand of 10.6 (53 hires divided by 5 years - 10.6 per year). The capacity of the AG program at MCC is 15 students per year according to the class size. The 15 seat capacity divided into 10.6 annual demand yields 70.7% capacity usage.
- Further augmentation from in-service needs is covered below.

2. Expansion matches replacement.

- Replacement accounts for about half (26, 49%) of the anticipated hires. Expansion accounts for the rest, in spite of recent downturn of the economy.

3. All sectors hiring.

- All sectors anticipate hiring. Yet the most notable demand comes from two sectors: Farmers (21) and Flowers (13).
- Within these sectors, much of the anticipated demand comes from just two employers:

  Large operator - Farmers: 15 hires (10 Expansion; 5 Replacement)
  Large operator - Flowers: 13 hires (5 Expansion; 8 Replacement)

- Two large operators collectively intend to hire 28 workers: more than all other respondents combined (25).

TABLE Q-7aa
Large Operators Contribution to Employment Demand

Sample	Hires	Expan	Replace
Large Operators (n = 2)	28	15	13
Other Respondents (n = 18)	25	12	13
Total Respondents (n = 20)	53	27	26

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4. Employment demand for trained workers.

- A better picture of employment demand is generated by assessing the anticipate hires (Q-7) after excluding respondents who said AG training is not a consideration in hiring (Q-8).

TABLE Q-7/Q-8
Employment Demand for Training Workers

Sample	Hires	Expan	Replace
Q8: Do not give pref (n = 2)*	15	5	10
Q8: Give pref to AG training (n = 12)	38	22	16
Total Hiring (n = 14)	53	27	26

*Note.- While there were 5 respondents who said "no" on Q-8, only two of them intend to hire.

- This process of factoring out the (two) employers (and the large operator in particular) who are not looking for trained workers yields the result that the anticipated employment on Molokai is for 38 hires over the next five years, or about 7.6 per year.
- The employment demand, therefore, would absorb half the program capacity. (15 seat capacity divided into 7.6 annual demand = 50.7%)
- To quote a large operator who intends to hire 13 new employers (Q-7). "The only work I need done is picking flowers and running a weed eater. Can you teach them to show up on time?"

C. Wage paid is above the minimum wage. (Table Q-7b)

TABLE Q-7b
Hourly Pay for Expected Hires

Sector	Min	$5.30-8.00	$8.00-15.00	$15.00-25.00	$25.00+
Agencies			3	1	
Farmers			3	2	
L'scape			2	1	
AquaC		1	1		
AnimalH			1		
Flowers		1			
Retail			1		
Overall	**0**	**2**	**11**	**4**	**0**

Note.- Some respondents left item blank; others checked more than one response.

- The minimum wage is offered to new AG hires by none of the responders to this item.
- At least $8/hr. is offered by most responders (15, 75%).
- Four (4) firms pay above $15/hr. These higher paying firms appear in the sectors: Agencies, Farmers, and Landscape Maintenance.

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D. Qualified Staff is Hard to Find. (Table Q-9)

1. On Question #9, many respondents reported difficulty finding qualified help.

TABLE Q-9
How Easy for Sectors to Find Qualified People

Sector	Easy	Some Easy	Difficult	Very Dif	N/A	Total
Agencies	–	1	3	1		5
Farmers			3		1	4
L'scape		1	1	1	1	4
AquaC			1	1		2
AnimalH			1		1	2
Flowers	1		1			2
Retail		1				1
Overall	**1**	**3**	**10**	**3**	**3**	**20**

- Reflecting difficulty finding qualified help are two-thirds (65%) of the responses (10 + 3 = 13 divided by 20.)
- Saying it is Very Difficult to find staff are three companies (15%).
- However, the large company that contributed a sizable demand for 13 new hires on Q-7 reported on this item that it is easy to find qualified labor.

E. Education is Desired for Short Workshops. (Table Q-4)

TABLE Q-4
Education Desired on Molokai

Sector	4-Year	2-Year	16-Week	Workshop	N/A
Agencies		* 1	* 1	5	
Farmers	1	1		3	1
L'scape	1	1	1	2	
AquaC			1	1	
AnimalH	1			1	
Flowers			1	2	
Retail		1			
Overall	**3**	**4**	**4**	**14**	**1**

*Note.- Two parties interested.

- A clear preference is expressed for AG education through short workshops (14, 70%).
- Longer certificate training is expressed by some:

  4-Year degree: 3 firms
  2-Year degree: 4 firms (5 parties)
  16-Week courses: 4 firms (5 parties)

These numbers are below the values generally needed to start a program cycle (except through some alternative mechanism offering concurrent enrollment).

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F. Coursework Wanted is Diverse. (Table Q-1a & Table Q-1b)

TABLE Q-1A
AG Coursework Wanted: Within AG Curriculum

Sector	Prop	Mgt	Veg	Flwr	Land	Turf	Irig	Pest	Eqmt	F/Nut	Pcid	Ttl
Agencies	4	–	1	2	–	6	14	7	7	–	8	49
Farmers	1	2	1	2	1	1	1	2	1	4	1	17
L'scape	6	2	1	1	5	2	2	2	1	2	2	26
AquaC	1	–	–	–	–	–	1	–	2	–	–	4
AnimalH	–	–	–	–	–	–	2	2	2	–	2	8
Flowers	1	2	–	2	–	1	1	1	–	–	–	8
Retail	–	3	–	–	–	–	–	1	1	–	1	6
Overall	**13**	**9**	**3**	**7**	**6**	**10**	**21**	**15**	**14**	**6**	**14**	**118**

Note.- An x (instead of supplying the number) was treated as "1."

TABLE Q-1b
AG Coursework Wanted: Ultra-AG Curriculum

Sector	Weld	Fors	Home	AHus	Rnge	ICS	Asci	Aqua	EgnR	Othr	Ttl
Agencies	4	3	3	4	4	6	4	4	7	–	39
Farmers	1	1	2	1	1	2	1	1	1	–	11
L'scape	1	1	5	–	–	2	1	2	–	–	12
AquaC	1	1	1	–	–	–	–	2	–	–	5
AnimalH	2	2	–	4	4	4	2	2	2	–	22
Flowers	2	1	–	–	1	1	–	1	2	–	8
Retail	–	–	1	–	–	2	–	–	1	–	4
Overall	**11**	**9**	**12**	**9**	**10**	**17**	**8**	**12**	**13**	**–**	**101**

Note.- An x (instead of supplying the number) was treated as "1."

- Interest is expressed for coursework at 219 seats.
- Agencies generated much of the interest (88 seats, 40%).
- Within the AG curriculum, most interest is expressed for: Irrigation (21), Pest Control (15), Pesticides (14), Equipment Operation (14), and Plant Propagation (13).
- Vegetable Crop, the mainstay of the current curriculum, is the category showing the least interest (3).
- The category with the greatest interest outside the AG curriculum is Computers (17).
- Other ultra-AG interests are expressed for: Engine Repair (13), Aquaculture (12), Home Gardening (12), Welding (11).

G. Preferred Time for Taking Classes is Evenings. (Table Q-3)

TABLE Q-3
Preferred Time for Classes

Sector	Morn	Aftn	Eve	Sat
Agencies	2	1	4	
Farmers			3	1
L'scape	1	1	4	2
AquaC			2	1
AnimalH			1	
Flowers	2	1	1	1
Retail			1	
Overall	**5**	**3**	**16**	**5**

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- A clear preference is given for evening classes (16, 80%).
- Very few respondents express interest in classes at other times: Morning (5, 25%); Afternoon (3, 15%); or Saturday (5, 25%).

H. Recent AG Education is Active. (Table Q-2)

- Seven of the 20 respondents (35%) report they or their staff received AG-related training within the past five years.

TABLE Q-2
Recent AG Education

Sector	Subject	Hrs/Emp.	No. Emp.	Location/Instructor
Agencies	Pesticides	32	2	MCC/Nagamine
Farmers	Wetlands	60	2	Off island
L'scape	Pesticides	5-10	2	–
AquaC	AS, AS	4 yr.	1	MCC Farm/Boswell
AnimalH	various	100's	20	MKK Sea Farm/S. Chalkin
Flowers	Accounting	–	1	MCC/Smith
Retail	Range Mgt	12	1	Hoolehua/UH Extension

- In-service activity is spread across all sectors.

I. Encouragement is Given to take AG Courses. (Table Q-5)

TABLE Q-5
Encouragement for AG Courses

	Encourage			Pay Books		
Sector	**yes**	**no**	**dpds**	**yes**	**no**	**dpds**
Agencies	5			2	2	1
Farmers	3	1		2	2	
L'scape	4			4		
AquaC	2			1	1	
AnimalH	2			1	1	
Flowers	1	1		1	1	
Retail	1				1	
Overall	**18**	**2**	**0**	**11**	**8**	**1**

- Most respondents (18, 90%) encourage employees to take courses. Ironically, the two companies (one in Farmers sector, the other in Flowers) not giving encouragement are the same two companies contributing to a large expected demand for employees in the next five years (15 and 13 respectively).
- As for paying tuition and books, a surprising 55 percent (n = 11) said they would.

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J. Computers have Come to Molokai Agriculture. (Table Q-6)

Q-6
Computer Usage

	WPRO			Spreadsheet			Database			Internet			AutoCAD		
Sector	f	s	n	f	s	n	f	s	n	f	s	n	f	s	n
Agencies	3		2		2	3	3		2		2	3			5
Farmers	3		1	3		1	1	1	2	2	1	1			4
L'scape	2		2	2		2	1		3			4			4
AquaC	2			1	1		1		1	2					2
AnimalH	1	1			1	1			2		1	1			2
Flowers	1		1	1		1		1	1			2			2
Retail	1			1					1		1				1
Overall	**13**	**1**	**6**	**8**	**4**	**8**	**6**	**2**	**12**	**4**	**5**	**11**	**0**	**0**	**20**

Note.- Blanks tallied with Never.
f = frequently; s = sometimes; n = never.

- Word processing is used frequently or sometimes by more than two-thirds (14, 70%) of the responding companies, spreading across all sectors; and most of these companies use word processing frequently. This result attests to the infusion of computers into day-by-day agriculture operations on Molokai.
- Spreadsheets are also used by two-thirds of the companies (13, 65%), but with less frequent usage than word processing.
- Databases are also used, although fewer than half (8, 40%) of the respondents use them.
- Internet is also used by about half (9, 45%) of the respondents.
- AutoCAD is used by none of the respondents.

K. Prospective New Jobs are Unclear. (Section II - 10)

- No pattern emerged on Q-10 as to prospective new agriculture jobs emerging on Molokai, although forestry was mentioned several times. The variety of responses is illustrated by Section II: Responder Comments.

L. Changes in Agriculture are Diverse. (Section II -11)

- No clear pattern on anticipated changes in Agriculture emerged from Q-11. Section II displays the variety of suggestions.

M. Barriers to MCC Classes are Interest and Time-of-Day. (Section II - 12)

- Several respondents expressed the scheduling format a barrier: an inability to take the longer classes or classes during the day. As one respondent suggested, "Offer more workshops, 1-3 days, on specific topics."
- Lack of variety in classes was another expressed barrier.

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SYNOPSIS

- The Molokai employment outlook in agriculture is not dismal, for 60% (n = 12) of the responding companies expect to hire AG personnel within the next five years, generating 53 available jobs. Expansion accounts for more than half (n = 27, 51%) of those jobs.
- Wages elevated above the minimum are offered by most (75%) at $8/hr. or more.
- Qualified staff is hard to find by many (65%).
- Despite the large percentage (60%) expecting to hire, this demand from Molokai's relatively small population base would absorb only two-thirds of program capacity for pre-service training.
- Much of the anticipated demand (n = 28, 53%) springs from just two large operators (one in Farming, the other in Flowers). And, the latter of these respondents did not want AG trained personnel.
- The employment demand was reconfigured by factoring out the espected hires from businesses which would not give consideration to AG training in their personnel decision (Q-8). This analysis reduced the anticipated employment demand from 10.6 to 7.6 hires per year.
- A 7.6 annual employment demand would absorb half (51%) of program capacity. This result leads to a recommendation that the Molokai AG program run less frequent program pre-service cycles and focus more on potential in-service needs.
- The coursework desired is diverse – interest is spread both within the AG curriculum (118 seats) and beyond it (101 seats).
- The topics within AG showing greatest interest were: Irrigation (21), Pest Control (15), Pesticides (14), Equipment Operation (14), and Plant Propagation (13). This result suggests offering these topics first. Note, too, that Vegetable Crop scored quite low (3), supporting a deferral here.
- Comparable interest was expressed for topics outside of Agriculture, including Computers (17), Engine Repair (13), Aquaculture (12), Home Gardening (12), and Welding (11). This result supports the recommendation to support business and vocational aspects of agriculture as well. The mailing list developed for this needs assessment could be used to target mail publicity fliers to AG companies.
- Computers should be a component of the offerings to the AG community. Computers ranked second from the top (17 seats) on Q-1: Coursework Wanted. And on Q-6: Computer Usage, about half the respondents use word processing, spreadsheets, databases, and the Internet to differing degrees.
- The time for offering classes showed a clear preference for evening classes (80% of respondents).
- The format for offering classes showed a preference for short workshops (70%). Note, however, a need was expressed for longer 16-week classes as well as for the A.S. and B.S. degrees, although on a small scale requiring alternative delivery.
- Encouragement to take AG classes is very high (90%), with a surprising 55 percent willing to pay for tuition and books.
- Recent AG education was reported by about a third (35%) of the respondents.
- The chief barrier from taking MCC classes before, as expressed on Q-12, was lack of interesting topics and the offering of day classes when the working public is unavailable.

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RESPONDER COMMENTS

10. In your opinion what prospective new jobs in Agriculture are emerging on Molokai?

I don't foresee as many new jobs as I would like to see. Too much idle land throughout Hoolehua area. Needs to be used more efficiently, and effectively. (Agency)
Native plant propagation - nursery. (Agency)
AG marketing, forestry (native) statewide, and Ag product processing. (Agency)
Managers for small farms. Landscape maintenance and irrigation repair on a labor level for Molokai Ranch. (Landscaper)
Hatchery, fishpond management, forestry, near-shore aquaculture. (Aquaculture)
Landscape, seaweed production, and papaya production. (Aquaculture)
Nothing much. (Farmer)
Tree crops, agroforestry, aquaculture. (Farmer)
Fieldwork and management. (Farmer)
Forestry, endangered species propagation, and tree farms. (Flower)
Marketing fresh produce. (AnimalH)
Flower production (leis), foliage - leather leaf. (AnimalH)

11. What changes in Agriculture do you foresee in

Business:
More export of Molokai products to neighbor island and mainland. (Agency)
More "at home" processing to produce "finished product." (Agency)
Landscaping. (Farmer)
No changes. (Farmer)
Toward sustainable AG, less reliance on chemicals. (Farmer)
Politically tougher. (Farmer)
Forestry. (Flower)
More production with less labor. (AnimalH)
The economy is shaky right now and anything new that will succeed is dependent on luck and perseverance. (AnimalH)

Technology:
The technology is available and ever-changing. What needs to be done is motivate Agriculture activities. (Agency)
Technology means to do the above. (Agency)
Internet. (Aquaculture)
No changes. (Farmer)
Easier. (Farmer)
Hybrids - lumber (fine) products, bowls. (Flower)
Technology to complement the above. [More production with less labor.] (AnimalH)

12. What barriers kept you/your staff from taking MCC classes before, and how may MCC improve its services to you?

Already a full-time employee, five days a week. Offer more workshops 1-3 days on specific items. (Agency)
No courses offered - where people could take them. (schedule) (Agency)
Limited number of classes. Time of classes - prefer after work hours. (Agency)
Classes help in day while I was working. They have offered all classes at night except the one that needs the daylight to work in the fields. (Landscaper)
Working schedule. (Landscaper)
Limited courses. (Aquaculture)
Availability of related classes or of interest. (Aquaculture)
Interest of employees. (Farmer)

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Variety and time. (Farmer)
Time constraints [barrier]. Research, tissue analysis, etc. [improved service] (Farmer)
Compatible time. (Flower)
The only work I need done is picking flowers or running a weed-eater. Can you teach them to show up on time? (Flower)
Time and distance. Centrally located campus would be better suited for us. (AnimalH)
A change of career field and a turn around in the beef industry. (AnimalH)

Other Comments:

The latest course list is great - I want 3 of them - but they're all at the same time. (Agency)
Do on-site training. (Aquaculture)
We are in the aquaculture industry! (Aquaculture)
Thanks. (Farmer)
Papaya seemed to be up and coming, but today's front page of the Advertiser suggested otherwise. (AnimalH)

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APPENDIX A
Developers of the Molokai Agriculture Needs Assessment

Agriculture Program:	Ann Emmsley, Agriculture Program Coordinator James Boswell, Molokai Farm Manager
Molokai Education Center:	Donna Haytko-Paoa, Molokai Coordinator Stephanie Dudoit, Account Clerk
Assistant Dean of Instruction:	Jean A. Pezzoli, Ph.D.
Dean of Instruction:	Liz d'Argy

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APPENDIX D
Mailing List

Sector	Sent*	Rcv'd	PerC
Agencies	9	5	56%
Farmers	19	4	21%
Landscape Maint	11	4	36%
Aquaculture	5	2	40%
Animal Husbandry	9	2	22%
Flower Crops	6	2	33%
Store/Retail	8	1	13%
Overall	**67**	**20**	**30%**

*Note.- Excludes (1) returned with insufficient address.

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